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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,531	01/21/2004	Hiroaki Mochizuki	118255	1091

25944 7590 10/03/2005

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EXAMINER

DUONG, THOI V

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,531

Applicant(s)

MOCHIZUKI, HIROAKI

Examiner

Thoi V. Duong

Art Unit

2871

(Signature)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 ~~is/are~~ rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/21/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species II, claims 1, 4-9 and 13 in the reply filed on July 11, 2005 is acknowledged. The traversal is on the ground(s) that the subject matter of all species is sufficiently related that a thorough search for the subject matter of any one species would encompass a search for the subject matter of the remaining species. This is found persuasive; therefore, the restriction requirement from the previous office action is withdrawn and claims 1-13 are all considered in this office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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3. Claims 1, 2, 11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Saitoh (USPN 6,636,192 B1).

Re claim 1, as shown in Figs. 1-4, Saitoh discloses an electro-optical device, comprising:

- a substrate 30,
- data lines 90;
- scanning lines 91 extending in a direction crossing the data lines 90,
- switching elements 10 to which a scanning signal is supplied through the scanning lines 3a;
- pixel electrodes 8 to which an image signal is supplied through the data lines 90 and the switching elements 10; and
- an alignment film 46 formed on the pixel electrodes 8;

the substrate 30 having an image display area 37 defined as an area to form the pixel electrodes and the switching elements 10, and a peripheral area defining the periphery of the image display area where a shielding film 55 is a part of the peripheral area, the alignment film 46 being formed in the image display area and the peripheral area, and convex portions (21, 200, 56) in being formed in at least a part of the peripheral area.

Re claim 2, as shown in Figs. 1 and 2, the electro-optical device of Saitoh further comprises a driving circuit 60 on the substrate 30,

the convex portions (21, 200, 56) being provided in an area between the image display area 37 and the driving circuit 60.

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Re claim 11, as shown in Fig. 1, Saitoh discloses that the substrate 10 has a rectangular outer configuration in plan view, and the image display area has a shape similar to the outer configuration of the substrate, and

the convex portions 21, 200, 56 are formed along one side of the image display area.

Finally, re claim 13, as shown in Fig. 18, Saitoh discloses an electronic apparatus comprising the electro-optical device described above (col. 18, lines 8-13).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 5-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saitoh (USPN 6,636,192 B1) in view of Murade (USPN 6,433,767 B1).

Saitoh discloses an electro-optical device that is basically the same as that recited in claims 3, 4, 5 and 9 except for a dummy pixel forming area formed outside the image display area, the convex portions being formed outside the dummy pixel forming area.

Re claim 3, as shown in Figs. 5 and 15, Murade discloses an electro-optical device including a dummy pixel forming area formed in a light blocking film 53 outside

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the image display area, the convex portions 52 being formed outside the dummy pixel forming area.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electro-optical device of Saitoh with the teaching of Murade by forming a dummy pixel forming area outside the image display area to stabilize the characteristics of the pixels near the edge of the image display area (col. 21, lines 18-27).

Re claim 5, as shown in Figs. 5 and 7, Murade discloses that projected portions caused by the height of the data lines 301 are formed in an insulating layer 7.

Re claims 6 and 7, as shown in Fig. 1, Saitoh discloses the convex portions including a plurality of convex portions 21, 200, 56 formed along a (vertical) direction in which the data lines 115 extend.

Re claim 9, as shown in Fig. 3 of Saitoh, the pitch between the linear convex portions 21, 200 and 56 are gradually increased with increasing distance from the image display area, from a place close to the image display area to a place apart from the image display area.

6. Claims 1-8 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murade (USPN 6,433,767 B1) in view of Chung et al. (Chung, USPN 6,927,830 B2).

Re claim 1, as shown in Figs. 1-7 (Figs. 5-7 are annotated), Murade discloses an electro-optical device, comprising:

a substrate 10,

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data lines 6a;

scanning lines 3a extending in a direction crossing the data lines 6a,

switching elements 30 to which a scanning signal is supplied through the scanning lines 3a;

pixel electrodes 9a to which an image signal is supplied through the data lines 6a and the switching elements 30; and

an alignment film 16 formed on the pixel electrodes;

the substrate 10 having an image display area (pixels on top of Fig. 5) defined as an area to form the pixel electrodes 9a and the switching elements 30 (Fig. 1), and a peripheral area defining the periphery of the image display area where a shielding film 53 is a part of the peripheral area (see also Fig. 15), the alignment film 16 being formed in the image display area, and convex portions (on top of image data lines 115 in Figs. 5 and 6) in being formed in at least a part of the peripheral area.

Murade discloses an electro-optical device that is basically the same as that recited in claim 1 except for the alignment film formed in the peripheral area.

As shown in Figs. 4 and 5, Chung discloses an electro-optical device comprising a display area 5 and a periphery area 6 comprising dummy pixels 82, wherein the alignment films 90 and 190 are formed in an image display area 5 and a peripheral area 6.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the electro-optical device of Murade with the teaching of Chung by forming the alignment film in the image display area and the

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peripheral area so as to have the image defect area, which is caused by impurity ions on the surface of the alignment film, screened by a black matrix formed around the display area (col. 8, lines 61-67).

Re claim 2, as shown in Fig. 5, the electro-optical device of Murade further comprises a driving circuit 101 on the substrate 10,

the convex portions being provided in an area between the image display area and the driving circuit 101.

Re claim 3, as shown in Fig. 5, the electro-optical device of Murade further includes a dummy pixel forming area formed outside the image display area, the convex portions being formed outside the dummy pixel forming area.

Re claim 4, as shown in Figs. 5 and 6, Murade discloses that projected portions on top of wirings 301 caused by the extended data lines 301 are formed in an insulating layer 7 (col. 18, lines 44-49), and

the height of the convex portions is equal to the height of the projected portions as shown in Figs. 6 and 7.

Re claim 5, as shown in Figs. 5 and 7, Murade discloses that projected portions caused by the height of the data lines 301 are formed in an insulating layer 7, and

the convex portions are formed along a direction in which the data lines 115 extend as shown in Fig. 1 (col. 8, lines 44-49).

Re claim 6, as shown in Figs. 1 and 6, Murade discloses that the convex portions are formed parallel to the direction in which the data lines 115 extend (col. 8, lines 44-49).

Re claim 7, as shown in Figs. 1 and 6, Murade discloses that the convex portions including a plurality of linear convex portions which are formed along the direction in which the data lines 115 extend.

Re claim 8, as shown in Fig. 5 of Murade, the pitch between the linear convex portions is equal to the pitch between the projected portions.

Re claim 10, Fig. 5 of Chung shows that the alignment direction indicated by the arrows is opposite to the peripheral portion of the image display area, it is clear that any convex portions formed in the peripheral area are also opposite to the direction of a rubbing process formed on the alignment film.

Re claim 11, as shown in Fig. 15, Murade discloses that the substrate 10 has a rectangular outer configuration in plan view, and the image display area has a shape similar to the outer configuration of the substrate, and

the convex portions are formed along one side (horizontal side) of the image display area as shown in Figs. 4 and 5.

Re claim 12, as shown in Figs. 3 and 12 (steps 14 and 15), the convex portions are caused by the height of a pattern formed of the same film as the data lines 6a (col. 18, lines 44-49).

Finally, re claim 13, as shown in Figs. 17-19, Murade discloses an electronic apparatus comprising the electro-optical device described above.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-

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2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong



09/29/2005


ANDREW SCHECHTER
PRIMARY EXAMINER

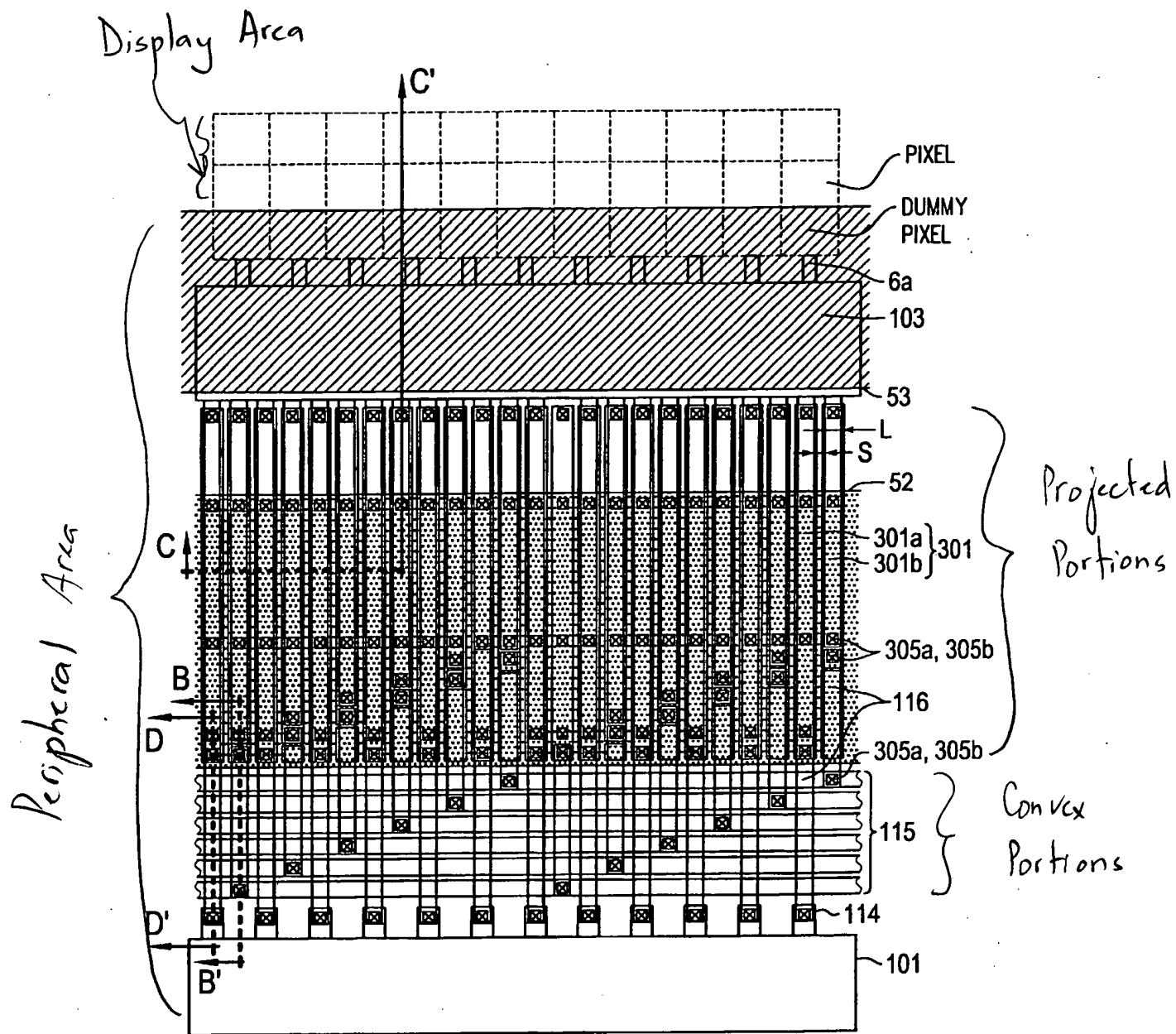


Fig. 5

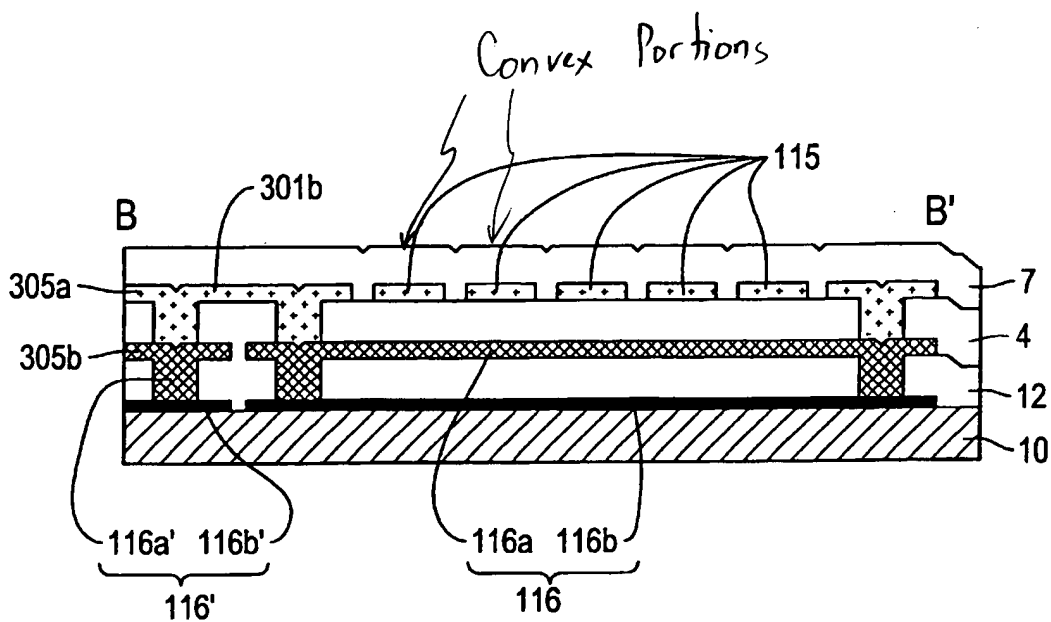


Fig. 6

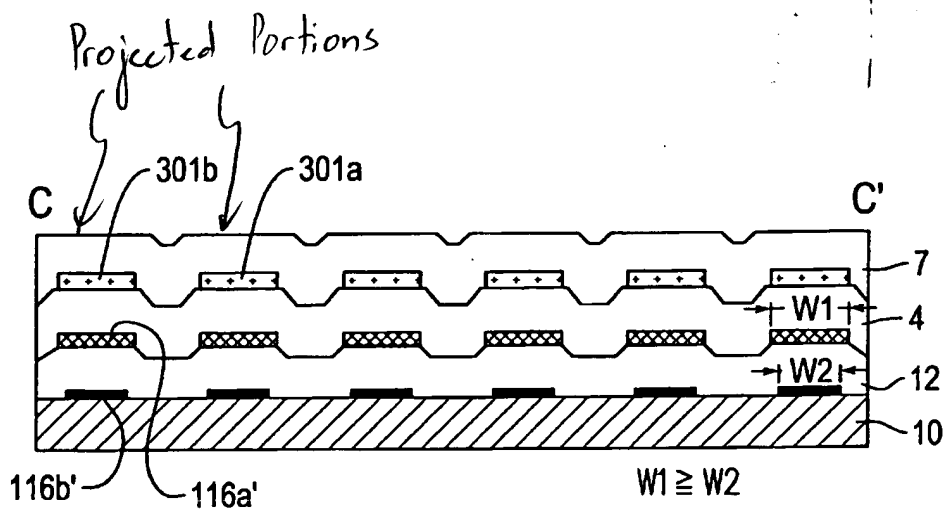


Fig. 7